WHAT IS CLAIMED:

1. A method for fabricating a magnetic device using semiconductor technology comprising the steps of:

forming a first conductor over a substrate;

patterning a first photoresist layer disposed over the first conductor to form via holes that expose a portion of the first conductor;

forming first partial via structures within the via holes that are connected to the first conductor;

forming a second photoresist layer disposed over the first conductor and first partial via structures and using the second photoresist layer to form a magnetic core arrangement disposed over the first conductor;

patterning a third photoresist layer disposed over the magnetic core arrangement and the second photoresist layer to form via holes co-linear with the first partial via structures;

forming second partial via structures within the co-linear via holes that are connected to the first partial via structures; and

forming a second conductor over the magnetic core arrangement connected to the second partial via structures, thereby forming via structures adapted to electrically connect the first conductor to the second conductor.

2. The method of claim 1 wherein forming the first conductor over the substrate comprises:

forming an insulative layer on the substrate;

forming a composite metal layer on the insulative layer; and

forming the first conductor using a photoresist mold formed on the composite metal layer, the photoresist mold exposing a portion of the composite metal layer, by removing a top

layer of the composite metal layer and depositing a first conductor material within the photoresist mold and over the exposed portion of the composite metal layer.

3. The method of claim 2, wherein the composite metal layer is comprised of a copper layer interposed between a bottom and top layer of titanium.

4. The method of claim 1, further comprising using the patterned first photoresist layer as a first interlayer dielectric layer between the first conductor and the magnetic core arrangement upon heat curing the first photoresist layer.

5. The method of claim 4, further comprising forming a magnetic core seed layer over the interlayer dielectric layer and removing a top layer of the magnetic core seed layer before forming the magnetic core arrangement.

6. The method of claim 5, further comprising forming a second conductor seed layer over a second interlayer dielectric layer, using the patterned third photoresist layer, before forming the second conductor.

7. The method of claim 6, further comprising removing portions of the second conductor seed layer extending beyond the via structures and encapsulating the magnetic device.

8. The method of claim 7, further comprising removing portions of the composite metal layer extending beyond the via structures.

9. A method for fabricating via structures adapted to couple a first and second conductor using semiconductor technology, the first conductor being formed over a substrate and the second conductor being formed over the first conductor, the method comprising:

forming a composite metal layer over the substrate;

forming the first conductor using a photoresist mold formed on the composite metal layer, the photoresist mold exposing a portion of the composite metal layer, by removing a top layer of the composite metal layer and depositing a first conductor material within the photoresist mold and over the exposed portion of the composite metal layer;

patterning a photoresist layer disposed over the first conductor to form via holes that expose a portion of the first conductor;

forming via structures within the via holes that are connected to the first conductor;

forming a second conductor seed layer over the photoresist layer and over the via structures; and

forming the second conductor over the second conductor seed layer and over the via structures.

10. The method of claim 9, further comprising removing portions of the composite metal layer and the second conductor seed layer extending laterally beyond the via structures.

11. A method for fabricating a magnetic device using semiconductor technology comprising the steps of:

forming a first conductor over a substrate;

patterning a first photoresist layer disposed over the first conductor, thereby forming via holes that expose a portion of the first conductor;

forming first partial via structures within the via holes that are connected to the first conductor;

patterning a second photoresist layer disposed over the first conductor and first partial via structures to form via holes co-linear with the first partial via structures;

forming second partial via structures within the co-linear via holes that are connected to the first partial via structures;

forming a magnetic core arrangement disposed over the first conductor using a portion of the second photoresist layer;

patterning a third photoresist layer disposed over the magnetic core arrangement and the second partial via structures to form via holes co-linear with the second partial via structures;

forming third partial via structures within the co-linear via holes that are connected to the second partial via structures; and

forming a second conductor over the magnetic core arrangement connected to the third partial via structures, thereby forming via structures adapted to electrically connect the first conductor to the second conductor.

12. The method of claim 11, wherein forming the first conductor over the substrate comprises:

forming an insulative layer on the substrate;

forming a composite metal layer on the insulative layer; and

forming the first conductor using a photoresist mold formed on the composite metal layer, the photoresist mold exposing a portion of the composite metal layer, by removing a top layer of the composite metal layer and depositing a first conductor material within the photoresist mold and over the exposed portion of the composite metal layer.

13. The method of claim 12, wherein the composite metal layer is comprised of a copper layer interposed between a bottom and top layer of titanium.

14. The method of claim 11, further comprising using the patterned first photoresist layer as a first interlayer dielectric layer between the first conductor and the magnetic core arrangement upon heat curing the first photoresist layer.

15. The method of claim 14, further comprising forming a magnetic core seed layer over the interlayer dielectric layer and removing a top layer of the magnetic core seed layer before forming the magnetic core arrangement.

16. The method of claim 15, further comprising forming a second conductor seed layer over a second interlayer dielectric layer, using the patterned third photoresist layer, before forming the second conductor.

17. The method of claim 16, further comprising removing portions of the second conductor seed layer extending beyond the via structures and encapsulating the magnetic device.

18. The method of claim 17, further comprising removing portions of the composite metal layer extending beyond the via structures.

19. A method for fabricating a magnetic device using semiconductor technology comprising the steps of:

forming a first conductor over a substrate;

patterning a first photoresist layer disposed over the first conductor and using the first photoresist layer as an interlayer dielectric and to form a magnetic core arrangement disposed over the first conductor;

patterning the first photoresist layer to form via holes that expose a portion of the first conductor and forming first partial via structures within the via holes that are connected to the first conductor;

patterning a second photoresist layer disposed over the magnetic core arrangement and the first partial via structures to form via holes co-linear with the first partial via structures;

forming second partial via structures within the co-linear via holes that are connected to the first partial via structures; and

forming a second conductor over the magnetic core arrangement connected to the second partial via structures, thereby forming via structures adapted to electrically couple the first conductor to the second conductor.

20. A method for fabricating a magnetic device using semiconductor technology comprising the steps of:

forming a first conductor over a substrate;

patterning a first photoresist layer disposed over the first conductor to form via holes that expose a portion of the first conductor;

forming first partial via structures within the via holes that are connected to the first conductor;

forming a magnetic core arrangement disposed over the first conductor using a portion of a second photoresist layer disposed over the first photoresist layer and the first partial via structures;

patterning the second photoresist layer to form via holes co-linear with the first partial via structures;

forming second partial via structures within the co-linear via holes that are connected to the first partial via structures;

patterning a third photoresist layer disposed over the magnetic core arrangement and the second partial via structures to form via holes co-linear with the second partial via structures;

forming third partial via structures within the co-linear holes that are connected to the second partial via structures; and

forming a second conductor over the magnetic core arrangement connected to the third partial via structures, thereby forming via structures adapted to electrically connect the first conductor to the second conductor.

21. The method of claim 1, further comprising providing the substrate having an insulating layer thereon, wherein the substrate is void of active components associated therewith and wherein fabrication of the magnetic device occurs separately, distinctly, and on a different substrate from the fabrication of active components to which said magnetic device may be connected.

22. The method of claim 1, wherein the magnetic core arrangement is comprised of at least two elongate sections separated by a central aperture and at least two short sections separated by the central aperture.

23. The method of claim 1, wherein the first conductor and the second conductor are electrically connected to produce a winding selected from a group consisting of: a simple winding, a bifilar winding, and a multifilar winding.

24. The method of claim 22, further comprising the step of subjecting the magnetic core arrangement to an external magnetic field to align an easy axis of said magnetic core along a desired direction relative to said at least two elongate sides.

25. The method of claim 1, wherein forming the magnetic core arrangement comprises the steps of depositing a layer of magnetic core material and depositing a layer of dielectric material, and repeating said steps until said magnetic core is of a desired thickness.

26. The method of claim 25, wherein said step of depositing a layer of magnetic core material includes incorporating an air gap into said layer of said magnetic core material.